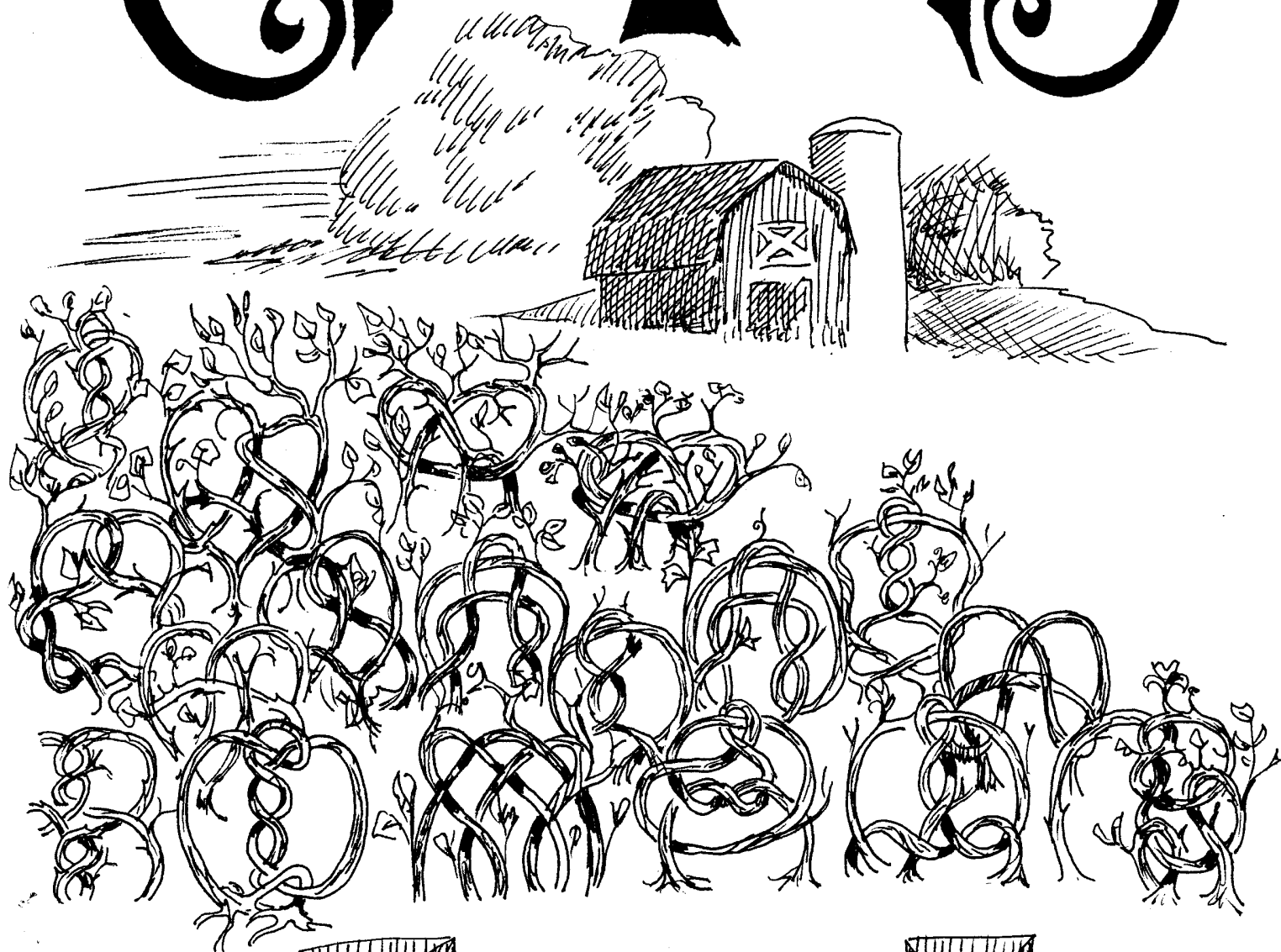


Apple Tree



BARRY'S KNOT FARM

Kavanagh
1989.

OCTOBER 1989

THE 555 TIMES

A P A - T E C H 6 7

The Amateur Press Association for General Technics

G.T. Buckfast
+ Shalmaneser

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The minimum activity required is six pages per year (not including frankings); up to two covers a year may be counted toward "minac."

The copy count for the APA is twenty (20).

The deadline for APA-TECH 68 is Friday, 1 December 1989.

Your postal account, up to the instant this hit the bottom of the mail cart, stood at:

824

Gabe & Audrey, Dave & Susannah, and Rolf should send some money in soon. Dave, Donna & Tullio, and Guy W. are strongly urged to send money. Thank you.

ROSTER

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October was a pretty rough month for me and we're just recovering from mid-quarter around here, so I'm afraid this is rather late. I'd like to take up a few administrative matters here. The first is that we really could use contributions of issue covers. Either Annette or I have usually been able to come up with an idea, but if school hangs both of us up, the issue gets hung up. Don't be bashful and don't worry about your drawing skills (I've been faking it with collage and rubber stamps for the last two years...). Secondly, I would like to recruit new or past contributors for the APA. We are up to eighteen now; on average, something over a third of you send something into each issue. It would be good all around, I think, to increase the roster. "Spec" copies are available to anyone writing me. If we reach 19 or 20 people, I will raise the copy count to 24. Lastly, we've a bit of a monetary crisis here; if your account is under \$2, please send some money by December. Take care. Be seeing you...

Shal.

Take this, Brother,
may it serve you
well

Guy Consolmagno nSJ
Jesuit Novitiate
Wernersville, PA 19565

So, you ask, what is life like here in the novice house?
Hmm...

We live in the eastern side of a large building that's shaped like a large H...the Spiritual Center (a retreat house that is the main source of income to support this place) is on the other wing and the large chapel and dining room are in the center of the house, the cross piece of the H. In each wing are 3 floors plus a basement, and there's about 25 rooms to a floor. However, many of the rooms have been connected together to make little "two-room" suites. Sixteen of us live in this wing...there are lots of empty rooms. Nine live on the third floor, six on the second floor, and our director, Father Jim Conroy, has his office on the first floor. However the other empty rooms do get used, especially as guest rooms whenever visitors come to the house. This house is used as a retreat house for the Jesuits of the province, and every Jesuit is required to make one retreat a year, so there's generally a handful of visitors at any given time.

Jim is in his early 40's, a gentle fellow, going quite bald now, and one who jokes about being a child of the 60's. In fact, he served in the army in Vietnam, in combat; apparently it's only in the last few years that he's felt at all comfortable about talking about it.

He's assisted by a chubby young priest named Bruce, who's still getting the feel of his job. He's new this year, and prone to make the sorts of mistakes that young and new people make, but he's very likable. He's sort of like a very large puppy. He lives at the end of the third floor hall.

Down near him is Shay, an Irish-German-Hawaiian-Chinese guy from Honolulu (by way of Georgetown University)...very smart, very personable, but very young. His big talents are cooking, music, and telling other people what they need to know...

Across from Shay is Keith, who's my age, an MD specializing in emergency room and internal medicine. Keith is very quiet, but he has the sort of sense of humor that can sneak up and zing you when you're not watching. He's tall and thin, like you'd expect from someone who gets up an hour before morning prayer to go running.

Next to Keith is Bob M., who causes a sensation last week by shaving off his beard. (He's growing it back; he needs it!

Without it he looks like the baby-faced kid that he is.) Bob's hobby is photography; he's the official photographer of everything around here. His real expertise, which he worked at for a couple of years before coming here, is working with psychologically troubled kids. But I think he feels young and lacking in self-confidence at times.

I live next to Shay and across from Bob. There are a couple of empty rooms next to us, and then the center of the hall where the telephone room, several offices, the stairs, and the bathroom and showers are located.

Further down the hall I haven't really placed who lives where just yet. But the people there include Bob H., who's in my year; he's a very personable newly-minted PhD in Economics.

Kevin also lives down there; he's in his early 20's, a classic red-headed Irish kid who studied history (African history at Middlebury, then American history at Catholic U) and lived in the DC area most of his life. He's a big sports fan...this summer, he toured the eastern US visiting as many different major league ballparks as he could get to.

On the second floor is a small chapel. The room nearest to it is where you'll find Tim, another economist in my group who did graduate work but never wrote a thesis; he's very soft-spoken, very reserved...he used to be an analyst (and more?) for the "an agency of the United States Government, if you know what I mean..."

Justin W. is the fifth member of my group; he majored in Classical Latin and Greek and played tight end for Harvard, class of '82. He's also from the DC area. He has the sort of sense of humor, the way of being wonderful and irritating at the same time, that marks him as a classic Harvard man, too! (He taught Latin for a while, at the high school where he and Kevin graduated from...while Kevin was still there!)

Jeff Chang, also from Hawaii via Georgetown, lives across from Justin; he's a couple of years younger than Shay, but they went to high school together. He's a good person, willing to help at anything.

Steve looks like a young truck driver, sort of chubby,

brush-cut hair, pack of cigarettes in his shirt pocket...he spent two years in the seminary already, before finishing his degree and then switching over to the Jesuits. Always laughing, very friendly.

Mickey is Puerto Rican, very intense and nervous, sort of burning up inside with I-don't-know-what. But a good, good person. He wants to do mission work in Central America--that says it all!

Then there's the two Eds. Ed Q. is the oldest of our group, a year older than me. He is a lawyer, and comes across as quietly competent and very personable.

Ed McC. is a classic Irish football player, always going down to the bar and talking sports with the locals, or playing soccer with a local team, built like a guard, talks in "dese and dose"...except, he's done graduate work in biblical studies and is nobody's fool.

Greg is kind of hard to place; he seems young, too, and I really don't know him very well.

Also on the second floor is the main classroom ("Room 200"). There's another classroom on the first floor, and in the basement is a TV room, a snack room (with 2 fridges stocked with soda and beer), a laundry room (two washers, two dryers...no coins needed!) and a barber's chair, and two large rooms called "aula"s which are sort of rec-rooms. One has a pool table and ping-pong table, the other has a stereo and comfy chairs. In the center "cross-piece" of the H is a larger laundry room, where we can pick up clean sheets and towels.

Daily schedule for me, when we adhere to it, runs something like this...

About 6 am, the sun shines through my window and wakes me up to a view of the rolling Pennsylvania countryside (the house is situated on the top of a hill in the middle of farmland, and recall I'm on the top floor.) It's gorgeous. Noting this fact, I roll over and go back to sleep. At 7, my alarm goes off and I stumble down the hall to the showers. By 7:30, we're all gathered in the chapel for morning prayer. Each novice takes turn leading the prayer; if he's a masochist, we may have to sing a hymn, too. At 7:45, we break for breakfast in the main cafeteria. Thursdays and

Sundays there's pancakes or eggs; the rest of the week, it's cold cereal and sweetrolls. The coffee's always on, however; that and the companionship is what's most important.

About 8:15, I'm back in my room probably writing a letter, to try to catch the mail which goes out at 9. From 8:30 to 9:30 we keep silence, and most of us spend the time in private prayer. My favorite routine is to pray while walking over the extensive grounds, in among the stands of trees and little hills.

From 9:30-10:30 is Jim's class, on the Jesuit ideals and techniques of prayer and spirituality and the history of our order. Bruce takes us from 10:30-11:30, covering the nuts-and-bolts of liturgy, and biblical studies. At 11:30 we have Mass, followed by a private and peculiarly Jesuit practice called *examen* (where you spend time just reviewing the morning, taking stock of what's going on in your life and where you're going with it).

From 12:30-1:15 is lunch, then 1:15 to 3:15 three days a week we'll have work assignments. These can be indoors (chopping vegetables in the kitchen) or outside (pulling weeds in the gardens). Then we're free until 5:15, when we either have a social hour with the other Jesuits in the house, or spend half an hour in silent prayer. Dinner is at 5:45. Typically, most of us meet to watch the news at 6:30, then at 7:15 we have an hour and a half of Spanish class from Bruce. The official day ends with night prayer at 9:30; by 10, I'm ready for bed!

How have I felt about being here? You name it, I've felt it. I've had moments of exhilaration, times when I've felt so close to God that it's been unnerving. And there are other times when I wonder what the hell I'm doing here...I miss spending money, ogling girls, and running my own life. The lowest times are when I contemplate some of the things I'll be asked to do over the next two years (like difficult volunteer work in the inner city). But I have no doubt that this is what I'm supposed to be doing; my only doubts are whether I'll be up to it.

TRANSPORTER
TOPICS

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66

Does anyone out there know how to get in touch with Mike Jittlov? Several members of the local F/SF club saw the premiere of his movie at last year's worldcon, and some more at this year's. We would like to show it at club meeting, maybe even arrange for a local screening. Unfortunately, the old address I have for him are no longer valid. I have his current phone number, but would rather write than call. Any help would be appreciated.

You see, two members of the club work for the Lexington Public Library, which has this marvellous new central branch building, complete with a small theater. It holds about a hundred people, and has projection TV and slide facilities, as well as standard movie projector capacity. We might even be able to charge admission and make a profit, although I believe that we would be better off doing this as a non-profit organization, which is what the club is.

Rivercon

Well, the fourteenth annual Rivercon is over. Jack Chalker was the guest of honor. It was a good con, except that I was seated too near a group of hecklers during the costume contest. Fortunately, most of them got bored and left early. I thought one of them was going to assault me when I asked him to be quiet, but no violence resulted and he kept his peace (for the most part) afterwards.

Dar, the editor of Low Orbit, the local club's fanzine, is short, slim and wears his hair long. He has created a Kitty Pride costume (this is a young female character from the X-Men comic, for those who don't know) which is quite convincing. He enters costume contests at conventions, and has the announcer state that Kitty Pride has quit the X-Men to start a new career. At this point, a husband and wife team, dressed as Jake and Elwood Blues (also very convincing), slide out onto the stage. The trio then begins a rendition of "Soul Man," with "Kitty" singing in a deep baritone voice. At Rivercon, someone was overheard after the contest asking "How did they get that girl's voice so low?"

I ran a Champions adventure which started at Sanctuary, the organization detailed in my "Neutral Ground" module. After a shaky start, the players did quite well, and we all had a ball. I

also brought several copies of "Sanctuary: The Untold Story" which contains the material cut from the official module. A game dealer bought most of them and promptly tripled the price. It proved popular, and between selling that and some of my author's copies of "Neutral Ground" I made over thirty dollars.

Finally, there was the police raid. Someone got into an argument with a friend, and called the Louisville police to report that there was a man running around the hotel lobby, waving a gun, then gave his friend's description. The police arrived in mass, and instead of asking the hotel employees behind the desk if they had seen anyone with a gun, they charged in, shotguns and revolvers at the ready. They accosted several people, including Sue Francis, the co-chair. She was waiting for an elevator. When the door opened, a policeman shoved a shotgun up her nose and told her to get on. Folks, this is not proper police procedure. Not only is it rude and prone to cause panic, it is a good way to get officers and bystander killed in the event of a real situation.

Noreascon III

Large numbers of both Techies and Centaur's Gatherum alumni were there. (I have often marvelled at the fact that I already knew so many of the contributors to the Gatherum before I joined.) I had a great time, largely because I was in very good health. Even my stomach cooperated. (Some of you may remember how sick I was last year.) Bill Higgins jokingly expressed surprise that I wasn't in bandages, since the last two times he had seen me I was suffering from poison ivy. It wasn't like I didn't try to disable myself. The Saturday before the con, I was on the roof of my Mother's house, patching a leak. Monday, my karate instructor dropped me during a throw (my fault; I used too much fabric softener in the dryer, and the gi was so slick he couldn't hold on). Finally, the night before I left, I mowed my lawn! Given the decrepit state of Boris, my lawnmower, it is a minor miracle that I was ambulatory. (It is called Boris because it is bolted together from bits and pieces of dead mowers.)

Registration, Dealers' Room, Hospitality Suite, exhibitions and most of the function rooms were all in the Hynes Auditorium. In fact, the Hospitality Suite and most of the exhibits were in one large room, dubbed the Concourse. Gaming and most of the videos were across the street at the Hyatt. The Hynes was adjacent to the Sheraton on one side and a shopping plaza on the other, and the buildings were directly connected, so that you didn't need to go outside to get around. My hotel was the Copley Square (as opposed to the Copley Plaza, on the same block), located three blocks away. I was in a family suite with five other people, only two of whom I had met before. There were two bedrooms and one bath. Fortunately, our schedules were divergent enough that there was little competition for bathroom space.

The weather in Boston was good, being cool and breezy (a bit

too breezy on occasion) with scattered showers for a short period one evening. I saw many friends, made some new ones, sat in on several panels, and went to some good parties. I saw Bill Higgins' Neptune slides and attended a couple of panels with GTers on them, including Bill's gadget timeline presentation. As usual, I was too busy to tour the local historic sites or eat at any fancy restaurants (except for a couple of meal excursions with groups), but I managed okay on fast food and sense of wonder. The only real problem I heard about can be summed up by a button on sale in the dealer's room, which read "The Sheraton did what?" There was a variation on this, which was "I'm from the Sheraton, I'm here to help you."

I saw, again, the "Wizard of Speed and Time" feature film, and enjoyed it, again. There was a booth in the concourse promoting his work, and I got some flyers.

Among the Gatherum people, I met Jim Groat, Terrie Smith, Mel White (I hope that's the right Mel. It's the female one.), and Kjartan Arnorsson (whose name is much easier to spell than to pronounce, and I'm usually pretty good at the latter). I also met a number of "furry" artists, people whose anthropomorphic work I had seen in fanzines or comics. (For some of these people, "furry" does not need to be in quotes! There was a preponderance of beards.) Several of these folks shared a table in the dealer's room. Mel, while sitting there, was working on a Klingon centaur who is intended to be a counter to Dataur in the Gatherum. Unfortunately, I started telling Klingon jokes. ("How long does it take Klingons to make popcorn?" "I don't know." "No one knows! As soon as it starts popping, they start shooting!") She finally threatened to do something drastic to me in a drawing for Barr Wars if I didn't shut up.

I managed to get both issues of Barr Wars, and from Alice Bently, whom I didn't even know was a dealer! I also bought "The Barr-Kjartan Jam", from Kjartan. At least two tables were selling the Centaurs Gatherum, but all they had was issue #16!

Sunday night, I happened to run into Bill Higgins and a few other Techies, a party in search of a location. After trying two hotel rooms, and learning that they were not open to invasion, we took over the San Francisco in '93 bid suite. The SF people had wonderful refreshments, such as exotic coffees, gourmet chocolate squares and fannish fortune cookies, and have made some interesting arrangements for facilities in '93. They were even supplying kazoos at the party! Bill and Barry started their famous routine, the rest of us joining in. After nearly an hour of this, instead of throwing us out, the concom representatives asked Bill and Barry to help with the entertainment at the convention! They certainly have my vote.

I finally gave in about 2:00 AM and left, intending to return to my room, since I had to catch a plane early the next afternoon. (And they weren't even in season!) Unfortunately, I passed the Furry party on the way and decided to stop in for a few moments. That is where I encountered Terrie Smith. I talked

with her for a while, and looked in some sketchbooks (wish I could draw!), then finally left around 3:00. I didn't get to bed until 3:00! Whew!

I would have to rate Noreascon 3 among the top three of the seven or eight Worldcons I've been to. Strangely, the previous Boston worldcon was probably my worst!

Well, here's hoping that I haven't bored you with tales most of you experienced first hand or have already heard from GTers who attended.

Mailing Comments

APA-Tech # 65

Note: This was started in July, but Rivercon and a general exhaustion caused me to put it off until September.

Dr. Gonzo: It is a fact that too many changes too fast, even if they are good changes, are destabilizing. People need something they can count on, something they can feel confident will be the same, always. * Re. Yr. Cmmt. The Great Jeff Duntemann Dilemma: I don't know about you, but I like to lie down when I read, something difficult with current electronic media. If they ever get electronic books small enough to hold with one hand, with the bottom resting comfortably on my stomach while I read, I would probably use it. Currently, if APA-Tech went electronic, I would still print out a hard copy to read. As for transmitting text, nearly every encounter I have had with computer telemetry, either at work or at a friend's house, has revealed problems. I have enough trouble with local calls, and you want me to fax something overseas! (And leave my computer running, unattended, to wait for incoming calls.) *

Dave Levine: Welcome back! * Sorry to hear about the fire. Considering what might have happened, you were lucky. * See you in Boston! (Touch wood.) * (Late note: I did.) *

Wayward Hackers: Now you know why my only vacations are to conventions. * I've never read any of the Father Brown mysteries, although I saw the PBS versions of some of the stories. Have you tried the Lord Peter Wimsey series? *

No Place Like Home: Congratulations on your house. * Re. Yr. Cmmt. Valli about shaving (or not shaving): Now you know the real reason I grow a beard in the winter! *

Noseless: I saw your son at Worldcon. He's a beautiful child. I took a picture of Mary holding him, and will send a copy if you want it. It is an unneeded twinprint, so no expense is involved. By the way, I expect to be an uncle again sometime in late December. * That's funny, jumping into a hot whirlpool or Jacuzzi usually makes me sleepy. * I recently attended a transportation symposium where a long talk was given on using the Global Positioning System in conjunction with a national Geographic Information System. * You probably noticed on your co-worker's

map that Kentucky has lots and lots of small counties. There are 120 of them, and in grade school they made us memorize every last one of them! *

Moving Concept: Regarding the incompatibility of Japanese and American electrical appliances, we are still far from a one-world standard in many areas. * The Japanese raise everything to an art. *

Parenthetical Perambulations: Bureaucracy at work. * RAEBNC means "Read And Enjoyed But No Comment." *

Crumbcrunchers: Congratulations, David, on graduating, and Susannah and Marlene, for surviving. *

APA-Tech # 66

Shal: Why are you complaining about the thinness of the issue? Don't you realize that the contributors were courteously leaving you room for those extensive indexes you publish in the annual issue? *

Crumbcrunchers: Our garden has suffered more from inattention than the elements. My sister and her husband have both been very busy this year (she's pregnant, for one thing) and I just haven't had time to tend vegetables I don't eat. * I plan to upgrade the RAM in my Amiga by at least a meg in coming months. It is 512 k now. * My maternal grandfather is 86 and starting to fail. He had cancer surgery a few months ago, and the doctor told him that they couldn't get it all, but that it was such a slow-growing variety that something else would kill him before the cancer bothered him again. At his last checkup, however, the baffled doctor announced my grandfather to be free of cancer. I think he got well just to spite the doctor. *

False Vacuum: It was too cloudy here to view the eclipse. *
Re. Yr. Cmnts. Me: I wouldn't trust a neural net to run a fusion reactor. The most sophisticated ones tend to make the same sort of mistakes as organic brains. That is, confuse similar objects, make errors of scale, etc. If I could define sentience, I would be a sure bet for the Nobel Prize. As for thought being chaotic, that's simple. Every time we think about a problem, our brains use one or more parallel paths to work toward a solution. The combinations of paths used change with time, resulting in a fresh approach at every attempt. Eventually, we find one that works. Thought is chaotic in the same way as the weather; it swings unpredictably within generally well-defined borders. *

all the best,
Rod

Crumbcrunchers, Inc.

Currently engaged in crunching crumbs at 501 Main Street, Ripley, Ohio 45167 (crumbs also found in post office box 98, for at least as long as I can find \$72 a year to pay the rent)

Late September 1989

Well, deadline time approacheth. The only really momentous event that has happened recently is that Marlene has graduated from preschooler to kindergartener. I can't find out too much that goes on at school, because when I ask, she says, "I won't tell you. It's a secret." She's also brought home her first cold, which means that everybody around our house is snuffling, sneezing, or barking like seals.

She complains that all they do is "play and color" in class. A colleague of Dave's, whose son attended the Ripley kindergarten a few years ago, asked him how Marlene was liking school, and he repeated this remark. Her reply was, "Well, it isn't November yet." November is apparently when they start doing "real work."

It's obvious that her kindergarten experience will be very different than mine. Half-day kindergarten classes seem to be a thing of the past - with both parents so often working, or single parent families, they're no longer the practical arrangement they were twenty or thirty years ago. Here in Ripley, there are probably sixty kindergarten age children. Since there is only one kindergarten teacher, there are two classes - children who attend school on Monday, Tuesday and Wednesday, and children who attend Thursday and Friday. The Thursday Friday children would seem to be shortchanged, but actually the class schedules will switch around after the New Year. (The Thursday Friday children are the younger ones who I guess might not be so able to cope with three class days in a row.)

Do you ever think about the things your parents wouldn't allow you to do, that you wished for desperately? For me, one of those things was being allowed to buy a cafeteria lunch! After two days of eating school lunches, Marlene's decided that bringing lunch from home is much more glamorous.

Or how often did you wish your school didn't have that dress code that kept guys from wearing jeans and sandals, and required girls to wear dresses or skirts? Since Marlene can wear jeans or shorts or overalls, she of course insists on a dress everyday, even in the wintertime. I suppose, though, that this attitude will change before she's in second or third grade. She even draws the lines at jumpers, because "jumpers are only for jumping in."

There is no school this week, because the Brown County Fair is going on! Of course, most fairs, county and otherwise, aren't going on during the school year, but still it strikes most people as rather odd. There being no school does work out well for people recovering from colds! (Though not for me!) MAYBE we will have a chance to go to the fair this weekend - I get the impression that the kindergarten is going to be discussing farm animals for the next few weeks.

Recent adventures include an opportunity to ride on a float in the Tobacco Festival parade; Marlene waved graciously at all the spectators, though she complained bitterly that the straw from the bales we were all sitting on was sticking her.

We visited the Indianapolis Zoo in August. A very small zoo, and perhaps not too impressive to one who's visited the Bronx, the San Diego or even the Cincinnati Zoo. However, it's just the right size to "do" completely in a single day. All the exhibits are habitats, with the exception of the animals in the domestic animal building. There are African and Australian plains exhibits, and a desert habitat that is in the works, though not completed yet. Other exhibits include a very large "natatorium" for the dolphins and killer whales, and aquarium. There aren't any native American animals, but the zoo is very new (it just opened this past June), so I'm sure that in a year or more, there will be a lot more to see at this zoo. The highlights for Marlene, I believe, were the elephant and carousel rides. We definitely recommend it if you ever visit Indianapolis.

Well, I seem to be running out of room, so I expect I should say farewell! Be well and happy.

Suzannah

Bean Town, Here We Come!

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We made going to Worldcon our big vacation of the year. Sam and I took off a week, well earned, I might add. (Last year's vacation was spent moving.) We arrived at Logan Airport on Saturday afternoon and rented a car. When we got in the car, I pulled out a bunch of maps, turned to Sam and said "Do you want to go north or south?" While Sam was driving north, I was looking at the map (of course) of Maine when a name jumped out at me. Kennebunkport. Yea, lets go see the ancestral home of George Walker Bush! We got into town late afternoon, at the height of rush hour (all of 15 minutes). It seems that the only way into town is across one bridge, so we quick found a cottage and then walked back to the bridge. Rush hour had already ended. We had a lovely seafood dinner and a stroll.

The next day we followed the coast south and past the Walker Family home, at least we think so, if armed guards and throngs of people are any indication. George wasn't home but we could have gotten our picture taken with him. After seeing the traffic, we can understand why the locals aren't happy when he comes to town with his entourage.

We headed back down the coast at a leisurely pace, stopping at an antique car museum at Wells. If you are passing through Maine, try to avoid Kittery. It is a shoppers paradise, full of outlet stores, a couple of miles worth, and it seemed that we had to go through it several times before we figured where we were going.

We toured the town of Portsmouth, N.H., full of flower gardens and history. I had to drag Sam away from watching a barrel maker. The flower gardens were where the red light district used to be.

We stopped for the night in Elliot, Maine at a B&B in a farmhouse built in 1704. The rehab had left the exterior intact and many of the interior beams were visible in our room. Breakfast consisted of blueberry pancakes with fresh picked wild blueberries and great conversation about the decline of American Education. (One of Sam's favorite topics.)

Next day we continued down the coast to Salem, Mass. and took the half hour witch hunt presentation, which was enough for me, and on to Plimoth Plantation.(sp.) The Plantation is a reenactment of the settle-

ment with actors playing the real people who first lived there in 1630. We also walked around Plymouth and visited their library.

Hit Woods Hole Tuesday, saw the museum with a movie on what Jason (robot submersible) could do. There is a great aquarium that lets you go behind the tanks to see how they work. John Frombach arrived while Cap'n Al was making us home-made pizzas for dinner. The next day the Wilsons arrived and we took a tour of the Institute. We got to see Jason being worked on. Al showed us his lab and the grabit he designed. He even let us take it out in the harbor and drive it by remote control. Wednesday night, we had fresh 6 lb. lobsters for dinner that we had picked out ourselves. Thursday morning Alvin arrived in port after being out on a test run. Then we left for Boston.

The convention was a bit of a disappointment, partially because our hotel was a mile and a half from the convention center and the convention center was difficult to navigate through, to say the least. The first problem we solved by buying a three day metro pass, the second we solved by not attending much of the convention. However, this was the first convention that I sat through the entire Hugo Awards Ceremony. I also saw a slide presentation of Neptune by Bill Higgins, went to the GT meeting and party, saw some of the art show and hucksters room. Also I got to see some of the costumes. The best one I saw was a novice, one person dressed as a dragonrider. She sat on the dragon, with her legs as the dragon's front legs, with fake legs for the rider.

We did see quiet a bit of Boston. We went to the Science Museum, the U.S. Constitution, Paul Revere's house, the old north church, Boston Commons, and much of the Italian district.

By the way , have I mentioned that the atlas that I spent almost 3000 hours working on (and grouching about) is finished, printed, bound and selling well? Anyone wishing to purchase Nystrom's World Atlas, a very useful resource, full of 203 maps, charts and illustrations, (and may I add, is the best atlas in the educational market) can get one by sending me \$3. Its a bargain. No home should be without one. For an extra dollar, I'll include a list of the few errors that are in the atlas. They were put in on purpose, just to see if you are paying attention.

Susannah: Have you read the Anne of Green Gables series of books by Lucy Maud Montgomery. Written at the turn of the century, they follow the life of Anne Shirley on Prince Edward Island, Canada. They are funny and warm, a feminine ideal of life, as Sam phrases it. He likes them.

On the Road Again

Still relying on low tech

Linda Matsushita

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Yas & I have spent the past few months looking for a house to buy. I've been doing quite a bit of library research on such things as desert house construction, desert plants, floor coverings, etc. We finally found a beautiful house that we both love. I had planned on describing every detail of the house and our plans for it, but alas, 'twas not to be.

A few days after signing the contract and entering escrow, Yas' manager said they were thinking of sending him to Austin, Texas for a year. Yas would commute - spending Mon thru Fri in Austin and weekends in Phoenix. Not being totally thrilled with this arrangement, we thought it more logical to just move to Austin for the year. We would go ahead and buy the house, leaving it empty for the year or possibly renting it out.

A week later, the temporary trip was beginning to take on signs of permanency. Motorola won't commit to details like where we'll be a year from now. They are saying, "If you want to buy a house, do it in Austin." Hint, hint.

The last weekend in Sept. we'll be going to Austin for an inspection trip. I've been trying to research Texas in general and Austin in particular. Austin is said to be the jewel of the state, as well as state capitol and headquarters of the University of Texas. The books of course only mention the positive aspects. I was told second-hand to stay away

from the woods - they're full of scorpions. Not surprising when you consider the area also sports a healthy population of tarantulas, various lizards, centipedes, rattlesnakes, cottonmouth snakes, water moccasins, and coral snakes.

Although we're somewhat leery of settling in Austin, we've come to the conclusion that the Fates have decided to take an active part in our lives. Austin is a small college town - population about 500,000 - with its predominate influence coming from the Old South. We're two Yankees from the big city. We already like the Phoenix area. A large part of the population are transplanted Midwesterners. We'll keep y'all posted on where we end up. Read you soon.

Linda

MAILING COMMENTS

Rolf: congrats on the new light in your life! Babies are so fascinating - complete beings in small packaging.

Annette: I was sorry to read you and Andy split up. It must have been a hard decision to make, but as ~~it~~ you said, at least it was "amicable".

Doug: Welcome to APA-TECH. Your work sounds interesting. Considering the recent explosion, is your job recognized as hazardous employment?

Foreshadowing – A Sign of Quality in Literature

– or –

Bloom County Never Mentioned Weaselrats



A Production of
The Imaginary Press, Ltd.

William H. Leininger, Proprietor
15 S. Maple Lane
Prospect Heights, IL 60070
(312) 253-8614

(Note: In November, the area code
of all your friends in the suburbs
of Chicago will change
from 312 to 708.
Don't say I didn't warn you.)

I see from the spec copies that Greg was kind enough to send, that Mr. Higgins has introduced the useful concept coined by George Ewing of the weaselrats, those little creatures that stealthily steal your best ideas and resell them on the black market.

The point I wish to make is that Weaselrats are simply a necessary part of the information economy. A case can be made for any ideas you have being "on loan" from a sort of idea bank. The weaselrats take ideas that you've had sitting around, waiting, and simply transfer them to someone who hopefully has more time than you do.

I've had a number of ideas weaselratted out from under me, sometimes with barely enough time to have thought of them, and others after years of haphazard thought. In some cases, I've become glad of it, as it meant that someone else had to do the tough part of working out all the details and getting the money to do something with it. In at least one case (which I'll get to later), I've had a chance to see the company offering the concept disappear from the face of the Earth. Therefore, I guess it wasn't one of my better ideas.

The virtual office

Imagine that you are an executive, working in the widget industry, and that to build widgets, you need thingamabobs. You've recently received a very attractive bid on thingamabobs, from a new company that you've never heard of before. You've investigated it, and they seem to be able to do the job. They'll get the contract, but first you want to talk to them. You pick up the phone, and dial their number.

"Good afternoon, Thingamabobs 'R Us. How may I help you?"

Their receptionist sounds cheerful enough.

"Yes. I'd like to speak to Bob Quartermain."

"I'll see if he's in. Who may I say is calling?"

"Jack Smythe, from Widgets, Inc."

"Just a moment, I'll connect you."

"Good morning, Mr. Smythe. Bob Quartermain here. What can I do for you?"

And so on. Perfectly normal business conversation, right? Now, let's look at it from the reverse angle.

It is the early afternoon in the American southwest. A group of rock climbers is part way up a mesa outside of a medium sized town. Suddenly, a cellular phone rings. One of the climbers takes something about the size of a cigar box out of his pack, and puts on a headset attached to it. He presses a button on the box, and the digitized voice of his girlfriend is played back into the phone.

"Good morning, Thingamabobs 'R Us. How may I help you?"

If you look back over the script above, you'll see that all of the receptionists responses were stereotyped, and contain no information specific to the phone call at hand. A little careful thought, and you can come up with a small set of phrases that will cover almost any situation, from "I'm sorry, we don't have anyone here by that name", to "Just a moment, I'll connect you" followed by the mysterious noises that all phone systems seem to make (with an option to "accidentally" disconnect the call).

Given modern technology, you can now create the illusion of an extensive business organization. A secretarial staff can live in a box, your real co-workers are just a conference call away (no matter where they are), fax machines fit in a briefcase, and there are services that will accept any packages you need to have shipped to you.

I thought this up a while ago, after I bought an audio digitizer for my Macintosh. Hypercard makes it easy to draw buttons on the screen and link them to actions. Unfortunately, the Macintosh is not portable. (At least, not for another five days, as I write this.) But Tandy corporation is making similar sound capabilities available on their PC clones these days, and there is no reason they couldn't be added to a laptop.

This was at the time of the great memory

price crunch, when the price of random access memory (RAM) virtually tripled overnight. I thought that the ideal situation for this would be as a RAM merchant. You could be in your car, taking calls, with a trunk full of chips shipped from overseas. When an order came in, you could enter it into your computer, pack the chips, print out an invoice, check the customers credit card, and drive to the Federal Express office to ship. If the order was from around town, you could beat out any other dealer on speed of delivery just be driving there and hand delivering.

Half a year or so after I thought of this, I noticed that a little software company was marketing it. They used a little more circumlocution, as they provided a stock of phrases prerecorded with the product, so they couldn't mention a company name.

Well, this was a while ago, and I don't see their ads anymore. I have several theories to cover this, one of which reveals a big flaw in my plan.

1. They were bought up by some telephone answering service, and the software is in wider use than you'd ever suspect.
2. They were bought out of business by several big firms, afraid of being tricked into doing business with the little guys.
3. Anyone that tried to use this technique went out of business.

The truth is that it was a cute idea, but too easy to implement to have any commercial success. Anyone who could imagine using it could easily put it together.

Besides, there is a big problem. Suppose you're a small businessman using this system, and your business starts to pick up. Suddenly, you (the head of the company) start having to spend all your time answering the telephone. The illusion of having a receptionist is effective only from the callers side. The true advantage of the system is that it uses the cheapest, most reliable general voice recognition system available. A human being. But that human being cannot be doing anything else while working the phone, and most people would rather be doing something else. That's why receptionists were invented. So it would seem that the usefulness of this

concept is naturally limited.

I do realize that telephone answering services essentially perform this service for customers, already. However, they are not as personalized in who they will let through and who they will stop, and in addition, they usually wish to be paid in return for doing this. If you were trying to start a business on less than a shoestring and needed a computer anyway, this might look a little attractive.

So, to return to my original thesis, the fact that the company that some weaselrat sold this idea to eventually disappeared off the face of the Earth seems to indicate that I owe that weaselrat some thanks for saving me the time and bother of pursuing a losing business.

There are other ideas that I wish had been weaselratted. Every so often, I get an idea for a book I'd like to read. Unfortunately, writing a book takes a good deal of time and I fear that I have not the skills I'd need to pursue such a project, anyway. If it is a work of nonfiction, it would typically require a great deal of research, and I never seem to have time for that these days.

Worse yet, if it is a work of fiction, I don't trust my writing skills sufficiently to undertake it. I usually end up wishing that I could give the idea to an established author, and enjoy it without having to go to all the effort of writing it myself and possibly messing up a perfectly good plotline with all kinds of inexperienced fumbling.

Take Two Diodes and Call Me in the Morning

Computer viruses have been much in the news of late. The concept goes back to the nineteen sixties at least, with anecdotal stories concerning programs that would type "I am the unknown glitch; catch me if you can" and disappear back into the operating system.¹ Fortunately, however, few malicious

1. Technically speaking, the Unknown Glitch and the Cookie Monster (similar program which demanded that you type Cookie before it let you get back to work) were not viruses, as they did not themselves into new programs. However, they were typically embedded in the system software by some enterprising programmer, and as it was not possible to reboot a timesharing system just to be rid of

examples can be found until the last several years. Various motives have been ascribed to the perpetrators of these programs, ranging from spite² to a sort of warped altruism³. There has even been a case where the person that commissioned the writing of a virus was simply trying to publicize his magazine. (This was the Macintosh Anniversary virus. There is a report that the editor of this magazine (a Canadian citizen) is being extradited to the U.S. for prosecution under the stronger computer crime statutes here.)

But a report in a recent Chicago Tribune mentions a new twist. There is a virus that afflicts IBM PCs that strikes on Columbus day. According to the Tribune, someone wrote this virus because they were upset about Christopher Columbus getting all the credit for discovering the new world, instead of the Vikings or the Irish. Politics! Not much of a political statement, but still, it is a start, given the usually apolitical nature of computer types. Now, every hothead with a cause may start trying to get your attention through your computer. And I can't help but wonder what this means for the future.

Will viruses be tailored to go after software and records of companies that don't pull out of South Africa? Will someone go after data from companies that are involved in the slaughter of whales? Will environmentalists go after logging and mining concerns? What could loggers and mining firms do to the membership records of environmental groups? Will political dirty trick squads attempt to plant bogus illegal

the nuisance, they were nearly as unavoidable as viruses. Besides, do you really want this to bog down in a discussion of the taxonomy of clandestine programs?

2. One programmer for Electronic Data Systems is alleged to have written a virus that only attacked programs written by a co-worker, under contract to a government agency. Unfortunately, the virus wasn't well written, and had the side effect of occasionally damaging other programs.
3. The now infamous Internet Worm was supposedly written to dramatically point out serious security flaws in various implementations of the UNIX operating system. A worm is not is generally not a virus, as it is usually implemented as standalone program which propagates from machine to machine across a network. The original work

donations into the campaigns of candidates they don't care for?

And will it go beyond that?

Will we see terrorists, forced to give up plastique (and cheese) by the neutron activation detectors at airports, instead try to plant viruses and time bombs in the software that controls our aircraft and heavy industrial equipment?

Something I do expect we'll see before too long: in both the IBM and Macintosh software worlds we have programs that we install into our systems to add functionality to our software. Some of them are intended to "correct" things that we think are wrong with how things were put together. Before too long, I expect to see someone write a virus to correct such things, whether we want it or not. They'll justify themselves by saying that this is how it should have worked in the first place.

Multiple choice quiz

The local paper has run a picture of a man's legs dangling from beneath a tree, after he managed to electrocute himself. What would you do about this?

- A) nothing
- B) Write a letter to the editor, expressing your distaste for this.
- C) Cancel your subscription.
- D) Paint slogans on the side of a school bus demanding that the local paper show more respect for the individual in question, and then crash the bus through the papers front window at 2 am in the morning.

Personally, I'd opt for A. Seeing such a photo in my morning paper might be a little disconcerting, but nothing compared to some of the fare served up from the war (or terrorist) action of your choice.

But it seems that someone in Arizona felt that D was the appropriate choice. My

in worms was done at Xerox Palo Alto Research Center in the early 1980s, as a way to make use of idle machines on a large network. Large tasks would be "segmented" and sent to unused machines, so that parts of a job could be executed in parallel. Interestingly enough, the researchers cite two science fiction books in their paper.

question is simply, why would anyone think that this was an appropriate action? Property damage is a terrible way to open a dialogue.

Endnotes

Well, that's it for the substantial material this time. In going over the roster, I didn't see that many names that weren't familiar to me, so I hope I will be forgiven for not introducing myself to everyone. If my name is unfamiliar, just speak up, and I'll repair the omission.

As for personal news, for those of you who are interested, I still work for G-Bar Corporation, a firm trading in stocks and stock options in Chicago, programing on the Apple Macintosh computer (although, any details of my work beyond that get a little foggy and may be subject to change without notice). I'm still driving a ten year old Ford Rustang, with 146000 miles on it, and still living at the old same place.

Mailing Comments

Seeing as Greg was unfair enough to send spec copies of recent issues, I am going to take advantage of this opportunity to get the first word in, before you've all had a chance to critique MY writing. (It seems as good a way as any to get things rolling.)

Issue 65

Valli—I do enjoy what I've seen of your travel stories. It is unlikely that I'll have a chance to go to Europe in the next few years, and the reports you write are of interest. After all, you have time (well, more time than a short trip tourist) to find interesting places and pick up more of the local flavor.

Your comments on community interest me. I came to realize some time ago that I feel a greater sense of community with many people who live across the country from me than with the people across my back yard hedge. The people who live near me live there simply because it is a place to live, not because we share any central feature in our lives.

As for electronic transmission of submissions, I've recently picked up a list of USENET nodes in Italy.

Unfortunately, it seems to be compressed in some arcane fashion, but I'm still trying to figure out how to read it. I, myself, recently gained a sort of low class access to the InterNet, and have had mixed success in communicating messages to Greg and Bill Higgins.

There are ways we could exchange the text of our submissions electronically. My machine at home will read and write (with a little work and some extra software) standard IBM 3.5 inch diskettes. I hear that there is something that will do this for the Amiga, as well. And of course, there is always transmitting them over a network or the phone.

But I think we've all come to expect more from our word processors than that. I can control the font, size, spacing and style of my text here on my machine. I can insert graphics to clarify concepts. But if I try to send that document to any other type of machine, all that will be lost. Sometimes, I have trouble just trying to get that kind of information to another Macintosh user, let alone another machine. There are no rigorous standards for exchanging that kind of information between machines, as yet.

As for scanning the 'zines into a text file, it turns out that Optical Character Recognition is getting better, but is not yet that good. I speak from experience here at work, of which I'll speak more another time.

Rolf—Thanks for the map. I'll have to start using a lighter shading for the counties I've been through, as it's getting tough to find where Illinois ends and neighboring states begin.

I see you're on BitNet. Do you have any idea how one would navigate through an Internet gateway to get to your machine?

Linda—Welcome back to the U.S.

Mailing comments

Issue 66

Greg—I was working late the night of the lunar eclipse. This is not as bad as it sounds, as my office is on the twentyninth floor of one of the southern most office buildings in Chicago's loop, just a few blocks from the lake. There is some light pollution, but that is getting tough to avoid anywhere.

There were some clouds obscuring the start of the eclipse, so I couldn't get a good look through the office refractor. (Yes, we have a telescope in our office. Actually two, but the owners of the company insist on keeping the four inch Newtonian in their office, which faces all the office buildings to the north.) I did get a good view after totality when I got off the train in the suburbs, though. I prefer the latter half of a lunar eclipse, as my eyes are generally better adapted then.

One has to be careful when devising random number generators. There was an article in The Communications of the ACM last summer that I would definitely recommend for some horror stories, and Donald Knuth has some misadventures to relate in Volume two of *The Art of Computer Programming*. One book I have goes so far as to suggest that the Data Encryption Standard makes a good random number generator, as a good cipher will produce what appears to be random output from organized input. Alas, "appear to be random" is just what I fear its output would be, as another of my books indicates that there are interesting symmetries in the internal workings of the DES. As the people who formulated it at IBM and the National Security Agency have not been allowed to explain the methodology used in formulating the algorithm, I fear that I for one could never trust it to be free of subtle statistical traps.

Chaotic behaviour may be

"globally" random, locally, it may not appear so. Take, for example, the Lorenz attractor. It loops and loops, each point following after another, each loop relatively close to the last, until it reaches a critical point, where it suddenly shifts. But, taken in a small batch, it all appears quite orderly.

As for my attempt to kill off Sherlock Homes at Reichenbach crater, I became discouraged upon discovering that oxygen was first liquified quite late in what is supposed to have been Holmes' life. I'm not certain, but I doubt that any other oxidizer would have proved sufficient. LOX and Kerosene seemed to be reasonable materials, but Ben Burch was holding out for LOX and liquid flourine. I felt that, while the energy gain is quite attractive, the fact that no one is comfortable suggesting a rocket engine buring this combination requiring metal O-rings, no organic compounds anywhere near it, and producing an exhaust of hydrofloric acid (guaranteed to etch glass) to this day, it was a bit beyond the reach of engineers of the period.

Again, on the subject of the electronic APA, I feel that there are not enough (or perhaps, too many!) standards to allow us to exchange materials in the form that we'd like. But that is a problem of transition. This year in Boston, the worldcon committee gave a special award to SF_Lovers digest, a note file that travels the networks and is read by and contributed to by hundreds of people daily. They have a large audience, and are not used to doing anything too fancy with their text while writing there.

A friend of mine here at G-Bar (who has one) tells me that there is some way to get the Amiga to read IBM format 3.5 inch diskettes. Is this standard on that machine? Do you know if yours can do this, or is it a patch or modification that would need to be done?

Final Note

Well, that's all I have ready at this time. I originally thought that the page on the other side of this one was an even page, meaning that I would have to stop abruptly. Instead, I find that I've left a partially blank page here.

So, just let me take advantage of this space to recommend a book to you.

Apollo, The Race to the Moon, by Charles Murray and Catherine Blycox is a topical enough seeming book. We've just passed the twentieth anniversary of Apollo eleven, and there have been a few books trying to tap the market. Actually, disappointingly few, in my opinion, but that's another matter for another time. Some of them have contained some startling bloopers, suggesting that they didn't receive the detailed research and careful editing such a work requires.

But this one I liked. Instead of trying to tell us the story of the race with Russia to put the first man on the moon (which was the focal point of some of the books written during and slightly after the fact. See particularly James Oberg's books, and *The Heavens and the Earth*, a political history of the space age, whose author I will not tempt fate by trying to recall off the top of my head here at my office), this book tells us some of the human story of the race with Kennedy's deadline to, before the decade was out, send a man to the moon, and return him safely to the earth. There have been numerous books written by and with the astronauts about their side of the story. But they were distracted by their own missions. Because of this, they couldn't be everywhere at once. Murray and Blycox have interviewed the engineers, the administrators, the people who stayed on the ground and pushed things through. Parts of the book deal with the design of the spacecraft, the difficult decision of exactly what type of mission to fly, and the experiences in mission simulation.

Particularly, a large part of the book centers on mission control in Houston: its people and structure. Who had control of what, and what their job was like. Perhaps someone less deeply interested in the space program will find the descriptions of how mission control works to be a point at which

the book bogs down, but I doubt it. And there is certainly enough other stories in the book to hold interest. I've just loaned the book to Higgins, so you may get to see another opinion in a couple of months.

(Parenthetically, I should add that I felt an urge while reading the book to go down to my local video rental place and check out *Marooned*. While not the most well acted of space films, it is one of the few that has any significant scenes taking place on the ground. I wanted to check the dialogue of the movie with my newly acquired knowledge from the book.)

In a similar vein, for people wanting material a little more recent should check *Before Lift Off* by Henry S.F. Cooper. Here, the material dealt with is shuttle astronaut training, and specifically the mission simulations. Cooper has written on the space program before (his *House in Space* covers Skylab, and I'll have to go back and read his book on Apollo thirteen, as I seem to have missed it when it came out in the seventies.)

Ok, that's it. See everyone in two months!

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PARENTHETICAL PERAMBULATIONS

news & ruminations from minnesota

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But first the good news (ahem) . . .

No, sorry, there's not much of it, but I'll get to it shortly. I have now passed all three of the damned tests, but because Minnesota has this absurd rule about passing two out of three of them in one session, I am out on my ear anyway. (The ear is much aggrieved.) Furthermore, the sadists make a practice of cutting off one's teaching assistantship at the end of the quarter in which one fails the tests. So, for the second time in six months, I am looking for a job. Now I figure there is a bright side to all of this--it will look great under the rubric of "Years of Struggle" when I am famous (although not rich) and they write my biography. (Delusions of grandeur are always good for a laugh in circumstances such as these.)

Now for the promised good news. Because I failed the tests, I was forced to make two decisions that I should have made a long time ago. First, I recruited myself an adviser for my master's thesis, and implicitly chose myself a specialty thereby. It turns out that I am a geometer after all, and not a partial-differential-equations person; I am doing a thesis on applications of differential geometry to mathematical physics, i.e. relativity. Right now I am reading Beem & Ehrlich's book on global Lorentzian geometry. The real reason I am excited about this project is that I'm finally getting to do something in math besides classwork, and I'll have an excuse to read a lot of stuff I haven't had the time to look at before. For example, I am elated to discover that I can read the first chapter or so of Hawking & Ellis (*The Large Scale Structure of Space-Time*), and what's more, it's a really nicely written book.

The other decision I should have made before was to leave the University of Minnesota. This department is poisonously depressing; as I've doubtless mentioned before, people (students and faculty) don't talk to each other much, and particularly don't talk shop with each other, as this is construed as giving away information to the competition. I have a couple of undergraduate protegees who have lots of bounce and enthusiasm and soul, and I am trying to talk them into going to graduate school anyplace else. Anyone who loves math ought to get as far away as possible from the math department here, as it is giving me doubts even as I'm finding my real calling.

The other bright spot is that I am taking Riemannian geometry (at long last!) and Greg is sitting in on the class with me, so I finally have someone to burble to. Furthermore, he gives me (absolutely free!!) explanations of physics. It is really a joy to talk to someone who's excited about his subject--there are precious few such people in my department.

A picky footnote: (this one is for Greg & any other members of the GT physics mafia & its groupies). $SO(5)$ can be interpreted as the collection of rotations of 5-dimensional real space. Essentially, these are transformations that preserve length and angle, and don't involve any reflections. Why this was chosen to model the aforementioned early single force is not clear to me, as I'm not a physicist. More explanations, s'il vous plait? (I am turning into a cosmology junkie.)

Some selected ranting on a soapbox dear to many of our hearts . . .

This summer, after my department unceremoniously dumped me in the street to find gainful employment, I got myself a job at the Hubert H. Humphrey Institute for Public Policy Studies. (Someday you too can be a Famous Dead American and have institutes named after you!) I taught a basic math class for minority students in their junior or senior years of college. My boss, Pete Cattrell (a human being of very high order) left me a completely free hand in designing the curriculum, and what I ended up teaching was a course in how to overcome stark terror and work on math in spite of it. The thing that most disturbed me was how much damage control I had to do--how much overcoming of the aforementioned stark terror--before I could even begin to teach math. Many of my students reported that they had been told by their teachers as early as the first grade that they were no good at math, they never would be, and it wasn't worth trying to teach them. This sort of traumatic experience seemed to have happened to both the male and female students--here the dominant factor seemed to be race. Looking at my own experience, I know I was aware of being passed over in favor of my male counterparts from at least the fifth grade onward, but for the most part it was fairly subtle, and it did happen later to me than it did to my summer students. I continue to be appalled at the number of bright, talented people this country is throwing away.

In my class this summer there was at least one student who was a "natural" at geometry--the one I'm thinking of really got her teeth into the problems and spent at least one half-hour conference with me arguing over the best approach to some of the particularly hairy ones. While I'm sure she'll make a real contribution as a policymaker, I cannot help but think that precious few of her teachers ever questioned the popular assumption that blacks, and particularly black females, do not do math. (I must confess that I discovered I had a few such assumptions myself. One of my other black female students was president of the chess club at her college. It's actually not the ethnic stereotype that I'm thinking of: of all my students, she had the worst case of math anxiety.)

Arrrgh.

Mailing comments

I am doing these by person, so the issues may get mixed up a tad. I apologize to everyone for getting behind, but school & associated horrors have kept me pretty busy.

JOACHIM SCHURMANN, apatech no. 63: I was delighted to read your review of Gandhi's autobiography. I read it when I was sixteen or so and found it thought-provoking. I had disagreements with Gandhi's outlook on the place of pleasure in human life: I am an Epicurean both by inclination and persuasion: I think that the pleasure principle, appropriately extended, is an exacting and sufficient guide to moral action. It was useful and illuminating to think on why I disagreed with him on this matter: and very influential to read about someone who did lead the

Parenthetical perambulations page three

proverbial examined life. I liked the subtitle a lot: the idea of "experiments with truth" was enough to grab me, as it's not the usual way of looking at the matter.

Since then, autobiography has become one of my favorite literary forms. I think it really intriguing to read someone's version of their own life; it's not just curiosity that prompts me, but a real interest in how other people solve the essential problem of how to live and what to live for. My two favorite autobiographies are Emma Goldman's **Living My Life** and Alexander Herzen's **My Past and Thoughts**. I don't know how far I agree with Goldman's politics, but she had lots of provocative thoughts on life in America (many of which still apply), and the power relations between the classes, races, and genders. Mostly I find her interesting because she was a person of extraordinary moral and physical courage, who didn't change her beliefs when they became unfashionable. She was one of the first American radicals to criticize the course and methods of the Russian Revolution, and bought herself no end of trouble by doing so with no concern for whether this was "politically correct." (Also interesting are her letters to her compatriot Alexander Berkman, many written when they were both in exile after the Revolution. There's lots of discussion of ends and means in revolution, and whether one can have the anarchists' dream of mutual aid and communities run by consensus without at the same time incurring what de Tocqueville called the "tyranny of the majority", i.e. rule by public opinion.)

My other favorite, Alexander Herzen, was a Russian journalist and revolutionary who was a contemporary of Tolstoy, and one of the last non-Marxist revolutionaries. I suppose this makes him sound deathly dull to some (but I have a fatal weakness for obscure dead Russians.) His memoirs read like a novel and are opinionated, provocative, and in many ways well out of the progressive nineteenth-century mainstream. Herzen was skeptical of progress as many of his contemporaries construed it; during the 1848 revolutions he expressed doubts as to whether one could build the earthly paradise on a pyramid of skulls. Unlike many "free love" advocates then and now, he didn't believe that jealousy and passion could be legislated out of existence--he insisted only that relations between men and women should not be those of property-owner to property. (One is even more impressed with his clear thinking on this matter when one discovers that he wrote these thoughts while his wife was being unfaithful to him with a man he considered a blazing twit, and a bad poet to boot.) One of my favorite quotes from his memoirs is a rude comment he was tempted to make (but didn't) at a diplomatic dinner party: an envoy from President Buchanan had given a soiree to which were invited many prominent Russian dissidents of the time. This gentleman was from Kentucky and had provided a powerful bourbon punch by way of refreshments, and remarked that the Russians and the Americans were the only peoples who really knew how to drink. Herzen was sorely tempted to remark that they were also the only European peoples who were really good at flogging slaves.

GUY CONSOLMAGNO apatech no. 63: Okay, I took the bait (re the story). In younger days (and from time to time these days, when I can) I trained to be a writer--i.e. I turned out a veritable Everest of dreck. So keep in mind I won't criticize any mistake that I haven't made myself, in spades. There are two main technical problems with the story, and they both have to do with exposition. The dialogue is clumsy, especially in the parts where it's being used to explain the situation in which the characters find themselves. There's also a bit too much detail provided in the descriptions of how the characters get from point A to point B, and too much description of what the landscape looks like. I know that when

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one is thinking about the physical setting of a story, one usually has a pretty detailed picture of it; and it does seem a waste not to try to convey **all of that** to the reader. Now the fact of the matter is that no matter how minutely you describe the landscape and the characters, every one of your readers is going to have a different mental picture of it. (Just look at the illustrations that accompany a short story or novel and see how the illustrator pictured the characters and the setting: ten to one it will be quite different from the picture you have in your head.) The difficulty is that if you give all the detail you think is necessary, you usually end up giving **too much**: after some time away, I've read some of my own fiction from high school and discovered that I was getting really impatient with descriptions of rocks and trees, and wanted the author (your humble servant) to get on with the story.

It's more or less the same thing with exposition, except trickier. Especially in a story set in an unfamiliar setting (be it the past, the future, or just another country or culture), there's a lot you want to tell your reader just so that she can find her way around. Doing exposition through dialogue is dangerous. Keep in mind that people involved in the same enterprise don't sit around explaining it to each other in excruciating detail. Go back and read a story of the same sort as yours, that you found particularly successful. Make a note of how much the author actually tells you about what's going on. Generally you'll find that you rooted out or inferred the situation from casually mentioned details. You want to throw your reader bodily into your imaginary world, not give her the dollar-fifty guided tour of it. Let the reader discover as much as possible on her own.

I also took the bait about your notions on immoral-but-not-illegal behaviors. I have some serious reservations about some of the things on the list. Prostitution, for example: are you suggesting sanctions against the prostitutes or their clients? Most prostitutes are not in the business for kicks, but out of sheer economic necessity; most (over 85% by some estimates) are survivors of childhood sexual abuse. Censuring the clients makes more sense. The idea of paying money to use someone else's body (and someone else who is at a severe disadvantage) is morally repellent; human beings are not things to be used. Abortion is another issue of this type--actually it's worse, because the public discourse on the subject, such as it is, consists mostly of slogan-shouting. The heart of the matter is this: abortion is a desperate measure, and it is practiced because there exist desperate situations. From what I have read, the clientele of the typical abortion clinic seems to include many married women whose husbands either forbid them to use contraception or sabotage what efforts they make in that direction. What is involved here is a question of power. The men who sue to prevent their wives or girlfriends or daughters from having abortions are not for the most part volunteering to raise the child themselves if it is born; they are asserting their property rights to "their" children. One might also mention that the American attitude toward sex education and contraception is Puritan in the extreme: information itself is considered dangerous. I know far too many anti-abortion activists who are also anti-contraception, anti-sex-education, and anti-feminist, not to have deep reservations about their motives. The answer to the "abortion problem" is to address the social problems which make such a desperate measure a necessary option in the minds of so many, not to persecute the individuals who elect to take that measure.

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VALLI HOSKI: comments at large. (no. 63) I did enjoy talking to you at Ishercon, and regret only that I was feeling so much under the weather. The bad news of the last few months (the divorce, the problems with school) were then in the works and I was having serious questions about the direction of my life. Your piece in no. 65 on "White Picket Fence Blues" gave me a lot of food for thought. I'm not as far along the proverbial path of life as you (I'm only 28) but, like you, I'm conscious of having made a lot of decisions that closed off certain options. My younger sister is married and has a child now, and while I decided at fifteen or so that children were out of the question, marriage or no, if I wanted to accomplish even half of what I hoped to, I still wonder about the path not taken. I try to be respectful of other people's choices, in the hope that they'll respect mine (or at least not hassle me too much). I guess I never felt any ties to the "white picket fence" scene; I always felt like an alien in that landscape. Going home to see my folks this summer gave me a severe case of culture shock; I found that I had not very much to say to them, and even less to the people I'd gone to high school with.

I don't live as far from my friends and what I think of as home base as you do, but I felt an immediate tug of longing when I read your appreciation of your friends and Chicago. I lived there for only five years, but it is one of the places I come home to. Going back there on holidays to see my best friend Diana (who is practically my sister as well) kept me alive and sane the last few years. I grew up moving every two years or so, and what I want now is to put down roots someplace, if only for a few years. I'd love to go back to graduate school eventually (and "eventually" it will have to be, since I have to do a tremendous amount of work before I'll be ready to volunteer myself to someone as a thesis student at the doctoral level). But I really don't want to move again; the very thought makes me shudder. I finally have a circle of friends here, albeit a small one, and I'm loath to leave them.

More comments on no.65: I have some reservations about your proposal of electronic transmission of zines, &c: it boils down to having access to the technology in question, and this is a matter of connections and/or money. Yours truly, for example, is typing her zine on a borrowed typewriter (thanks, Greg). I guess the reason I bring this up is that I have problems in general with the notion that computers are some sort of panacea: they are only for those who can afford them. A less frivolous example: The last time Andy Anda and I were in Lansing, Andy was talking with great enthusiasm about the many computer devices available for the handicapped; my sister, who is a reader for a blind graduate student, pointed out that state & federal funds for the handicapped are next to nothing, and certainly won't cover expensive hardware--her client's allowance from the state barely covers the special tape recorder that her readers use. Again, it comes down to access, and access usually means money. It's great that such wonderful technology exists, but it doesn't help people who can't afford it.

BONNIE JONES apatech no. 65: As you point out, the worst kind of bias is the kind you buy into yourself: the really heartbreaking thing about my students this summer was that so many of them really did believe that they were "dumb at math." It is a real fight not to believe all the authoritative voices that tell you these things: the more strikes you have against you (race, class, gender) the harder it is. I keep sane by teaching other people to fight this good fight.

SUSANNAH WEST apatech no. 63: I really liked your franking on micropress publications. I've had a lively interest in samll presses (particularly ones with a "radical" or out-of-the-mainstream viewpoint). From the very little I've seen, the small presses (black, Hispanic, gay, feminist) are publishing a fair amount of compelling and technically interesting poetry and fiction. I've found mainstream literary magazines deathly dull: there's a lot of dull, self-involved (but "literarily meritorious") dreck being written by a passel of white, middle-class academics. (The note of scorn should be placed firmly on the noun "academic". White and middle-class one can't help. Academic is a matter of choice.)

I should confess that had I arbitrarily large amounts of \$\$, I would indulge myself in a desktop publishing (aka home samizdat) setup. I've always had a yen to run my own literary or political rag, and the folks described in your franking, although they are a bit more avant-garde than I, certainly have the right idea. Why shouldn't everybody try their hand at writing--and having an audience? I am thoroughly sick of the idea that writing is something that "professionals" do and "amateurs" ought not to do, or at any rate, ought not to do in public.

ONE MORE THING:

Your humble author does not often volunteer her services as theater critic, but I have one for somebody's must-see list. Greg and Andy and I went to see a local production of **Breaking the Code**, a play based on Andrew Hodges' recent biography of Alan Turing. It's an excellent play, surprisingly quite funny in parts (most of the humor derives from the spectacle of a mathematician trying to deal with normal people), and (for nitpickers such as myself) true to history. The night we went, the audience seemed to be evenly divided between the expected math and computer science delegations, and people from the gay community (which is not to imply an empty intersection between the two sets).

At six pages, I have (I hope) discharged my duty as a patriotic citizen of this apa, and I bid my patient readers au revoir. I am hoping to make it to Chicago for Capricorn, perhaps, and may see some of you there . . .

EIGHT MILLION MILES HIGH AND FALLING FAST

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It's snowing outside today as I write this. Strange to think that a little over a week ago, it was around 80° for a few days. It's not the cold I mind around here so much, it's the fifty-degree temperature swings...

My visit to Pasadena was not enormous fun in the conventional sense of the word, but it held a lot of interest. The town is a still reasonably quiet suburb of Los Angeles, up at the foot of the San Gabriel Mountains about twelve miles away from downtown. Unfortunately, you can't see the mountains most of the time: I had a roommate for three years who came from there and I at last found out what he meant when he said that Pasadena is "where the smog stops." (Mondays through Saturdays, it may as well be Indiana with palm trees...) Even though Caltech is there, Pasadena has no campustown area and seems very little influenced by a collegiate atmosphere. I was surprised to learn that Caltech only has about 2000 students and less than 4000 people altogether; it also has almost no direct interaction with JPL, despite the amount of news items which seem to link them. Dpwntown Pasadena is a pleasant, if unspectacular, place to walk around in.

I travelled there originally because my Technical Committee meeting was being hosted by the members at JPL to coincide with the Voyager 2 flyby of Neptune. The Second International Conference on Solar System Exploration also coincided, as did the annual meeting of the Division of Dynamical Astronomy of the American Astronomical Society, so I decided to make it an even two weeks and visit San Diego as well. When I last wrote and mailed APA-TECH #66, Voyager had just reached Neptune. I spent the first couple days at the Solar System conference, hanging out with my former GD co-workers. Our first evening was auspicious: the conference was giving away coupons for Charlie Brown's; when we got there, we had to order the Fettucine Neptune, made with seafood and green noodles. The conference was three solidly-packed days with four parallel tracks of talks on planetary science and the technology for exploring the solar system. There was also an auditorium open to the public most of August 23rd to 25th, with a huge projection of the incoming images from Neptune (we decided it's like the difference between vase and "vahze": a "vahze" costs more than \$20; pictures taken with expensive spaceprobes are "images") and an expert to (try to) answer questions from the walk-in audience. This was on the Caltech campus; you had to be Somebody to hang around JPL (not that it mattered: the joint was mobbed with press people and VIPs and you saw the same "images" at the same time, anyway). Higgins showed up a day before the encounter and got to play roving reporter, taking notes at the presentations, looking at the color photos released from up the hill, and taping three-minute vignettes for Dial-a-Planet at night (oh yeah, and hobnobbing with celebrities: he can tell you about drinking champagne with Planetary Society leaders and Star Trek cast members...). We split a room and a car until Sunday, but didn't see a lot of each other until the weekend.

Friday, the day after the aged but doughty little robot whizzed by the big green planet, I had my Committee meeting. I overheard some interesting stuff about plans for the Galileo mission (which is FINALLY on its way, thank Prime!). It seems that the spacecraft's telescope is good enough that it should be able to pick out cities on Earth's nightside during its two swingby approaches (of course: you go to Jupiter by flying to Venus, then Earth, then Earth again! -- sounds like the plotline of **Abbott and Costello Go to Mars...**). Since everybody nowadays is

doing movies of planetary images... So figure on seeing a new version of **Earth: the Movie** early in '91. At the meeting I reported on my progress on this year's article on "Highlights" in Space Sciences and Astronomy, which was due in to the Editor in about two weeks. I got some useful items from a few members, which helped me a good bit (anything not to have to research the **whole** thing myself). I've attached my manuscript to this 'zine (it's in standard pitch because AIAA scans it into their word processor...). I've already corrected the galley proof; it's probably in press about now and will appear in the December issue of **Aerospace America** (with pretty color "images" of Neptune), the "clubzine" of AIAA. I also volunteered (like a dummy) to be the chairperson for the Committee's paper sessions at the AIAA Aerospace Sciences meeting in January 1991 in Reno. Fortunately, all I have to be is a letter drop for the abstracts and a noodge to the session chairpeople (not much more work than I had to do for the 1990 meeting). That'll be my swan song for activities with that group; I'll have to see how I feel next year about taking up with something else...

Bill and I went to the party at Planetary Society House, where we ate party stuff, looked at the big paintings (presumably not done in **plaine aire**), and explained antimatter propulsion to anyone who would listen. We also got to annoy exhibitors a bit on the last day of Planetfest, the Planetary Society's big public show, and see some of Old Town Pasadena (another gentrified version of what the town used to be like a hundred years ago -- I doubt they had **nouvelle cuisine** at the time...). One of the Committee members was also nice enough to get us in to JPL on Saturday and gave us (and several of the other members) a little tour of some of the facilities. There's not a lot to tell you about that: things were a bit disrupted due to the occasion; JPL builds spacecraft right there on the site, but Galileo had left just a couple months earlier and all the future stuff is still on the drawing boards presently. (And yes, we **did** see Carl Sagan in the commissary...)

* * *

Enough about the past for now. We're almost two-thirds of the way through fall quarter here and final exams are a month away. I'm only registered for one course in high-energy astrophysics because of the peculiarities of scheduling for my remaining required courses. I am also shadow-studying classical mechanics; my advisor thinks I should have a better grasp of the material than I got last year, so I am doing the homework and taking the exams and will be told what my grade would have been. Happily, the instructor is very good (but **very** heavy on the mathematical aspects, to the horror of many students) and will be doing the entire classical physics sequence this year, the rest of which I **will** be registered for.

On the side, I am involved with the local Volunteers in Action Mentor program, quite by accident. Someone called the Department office to ask if anyone there could help out a ninth-grader interested in the astronaut program and space medicine (of course: call the Astronomy Department; as it happens, the Aerospace Engineering Department does almost **no** space stuff). Some people in the Department thought of me (**me?**). So, once a week, I will be talking space with a hapless fourteen-year-old and will try to avoid burying her in stuff to read; otherwise, it's fun so far...

* * *

MAILING COMMENTS

APA-TECH 65
(continued)

Dave I hope this finds you well. Again, I'm glad neither you nor Kate were hurt in the fire. Congratulations on your promotion; what's it like working with a sixth of a writer? I'm thinking about being in San Diego around NASFiC time: see you there?

Gabe and Audrey I hate travelling myself, but I love to be in new and different places (in my future history, teleportation is invented by someone who feels this way). I've certainly taken trips that didn't seem worth the money, but I can see spending the dough from time to time to do something I couldn't do where I live. Not having lots of money to spend, though, certainly teaches you to look for as much of interest around home as possible. Anyway, tell us more about your travels.

Chesterton is probably not for everybody (as evidenced by the absence of any of his works, **besides** "Father Brown", in bookstores and most libraries). He was greatly interested in mystery, mysticism, and paradox (Borges cites him as one of **his** influences, which is how I got started reading Chesterton). He seems to be much a man of his time and culture in other ways, some of which you have pointed out. My impression is that the "Father Brown" stories are not intended to be "fair" mysteries, in the connoisseur's sense of the word; he seems far more interested in dealing with the seemingly self-contradictory aspects of religion (Christianity, in particular) and in the situation of living in a paradoxical, ironical world.

I haven't made a list of my magazine subscriptions lately. I have let a few lapse, since I am so far behind on **most** of them, anyway, and may as well not aggravate the problem. A visitor could get a fair idea of what I receive by surveying the little stacks on my living room floor (*sigh*)...

I have seen ads for the I.R.S. No Speak label. I'll keep an eye out the next time I am in a **good** (i.e., non-chain) record store with money to spend.

Bonnie The sad thing about those early issues is that some of the 'zines have faded into illegibility, even though I've had my copies stored in total darkness all of that time. It occurs to me now that the June cover should have been something like, "APA-TECH: Ten Years of Screaming for Covers."

I'm glad you and Sam are enjoying the house. How did the new atlas turn out? (I keep wanting to type that word with a capital "A": our new Atlases allegedly start flying next year).

Rod OK, I'm jealous: ink-jet and laser printers are starting to slide under \$1000, but it's going to be some time before I have that kind of money again to sink into the computer. I also don't do enough word-processing to make it worth the expense (which is why I'm using an electronic typewriter Brother doesn't even **make** anymore). Anyway, it makes your 'zine look nice! Can you get other fonts?

Did "Saturday Night Live" introduce the phrase "Get a Life"? It seems to have become ensconced successfully in the language...

What sort of society do we live in where a comic book **parodying** another comic book becomes a TV show, a movie, and even (*oy vey*) a **breakfast cereal**?!

I heard Scott Crossfield talk in San Diego about a year and a half ago on the old NASA rocket plane program. He described some of the proposed "follow-ons" to the X-15, including the version that would put it in orbit. He was rather derisive of the rocket people, who "would jump up and down and clap each other on the back every time they got one off the ground," while the rocket-plane program was "putting people in space every day." I wonder if the X-30 will work half as well...

Rolf Hope your nose is OK and you, Mary, and Anders are well. The translator for **The Laughing Policeman** was Alan Blair (he says as he steps over to his mystery shelf), just to complete your listing. I was walking home through Dinkytown one evening and spotted someone carrying a black-jacketed paperback I instantly recognized as **Roseanna**; the big white rectangle on the front cover, however, led me to suspect that the owner bought it in Europe (the cover would carry a list of the book's price in every country) and that it was **untranslated**.

Linda Once again, welcome back to the U.S.&A. How is Yas taking to living here now? What do you miss about life in Japan?

Annette I'm keeping an eye out (nearly as revolting a phrase as "keeping it peeled," or, as the Brits say, "skinned") for Sykes' book the next time I'm at the City Library, while I also look for Bloom's **Closing of the American Mind**. I have to discipline myself to use the library, instead of trying to buy everything I'd like to read... A couple related books I saw at the Gringolet Bookstore were Harris' **Why Nothing Works**, on the general American situation, and another, the author of which I've forgotten, called **We All Have Scars**, on what the public education system does to children. All guaranteed to get you hopping mad...

Me Steven Koonin, from Berkeley (?), was through here a couple weeks ago to talk about the present status of cold fusion. Apparently, he is sitting on a Congressional Commission to review all of the existing work and to decide what it means. It doesn't look good: the calorimetric results are all over the place, there is but one case of excess radiation above the background that is **not** readily disposed of, and only one measurement of tritium production. The burden of proof is definitely going to be on the experimenters and they're going to have to be a lot tidier and come up with something **really** air-tight before they're going to get much of a hearing any more. Interestingly, there are some other approaches to cold fusion that seem to be producing results, but it's hard to see just now how you can get commercial-grade power out of them...

Susannah and Dave Congratulations to Dave upon the receipt of his M.B.A.! Nothing to worry about with Marlene: I'm sure **most** of the people who come to commencement exercises would rather wander about, climb on the chairs, visit the restroom, and eat all the food (I know I did at mine!).

Guy W. Sorry I missed the Berserker again! I saw the aerial recon photos of the aftermath: thanks for leaving some of the Upper Peninsula intact...

* * *

The last issue was short, so I'll save my comments for next time and get this thing on its way to you. If you know someone who might be interested in joining the APA, have them write me for a "spec" copy. I'd like to get the roster back up to around twenty-five people or so and it would be good to bring in some new folks. Enjoy what's left of the autumn (ours seems to be over already). Take care.

Highlights in Space Sciences and Astronomy for 1989

This past year was the year 1986 was intended to be: one in which the exploration of the Solar System was aggressively revived and that of more distant realms was ambitiously pursued. As it was revealed at the Second International Conference on Solar System Exploration at Pasadena in August, 1989 will be seen as the commencement of a "second golden age," with the United States, the Soviet Union, Western Europe, and Japan participating in a more thorough reconnaissance of our stellar system. In the next fifteen years, every planet from Mercury to Saturn, including the Earth and its Moon, several asteroids, and even a comet or two, will be scrutinized either for the first time or in far greater detail than has been previously possible.

Certainly the most exciting occasion of the year was the flyby of Neptune by Voyager 2, a continuing mission from the first "golden age." In the opening days of its thirteenth year of operation, this spacecraft succeeded in accomplishing virtually all of the scientific objectives desired by its project members. The aged probe fully obeyed its instructions as it was guided to a point just over 3000 miles above the clouds of Neptune and thence to pass behind Triton to produce occultations of the Sun and Earth. Data and images from the planet, its eight moons now known to exist, and its system of both narrow and diffuse rings make it possible for us to know Neptune as thoroughly as we do the other three giant planets of our Solar System; understanding will come in time. From that final planetary encounter, Voyager 2 goes on to join its twin, Voyager 1, and its cousins, Pioneer 10 and 11, as they probe the medium between the stars and study the influence of the Sun's magnetic field upon it, a mission which could continue for at least another twenty-five years.

The new wave of exploration began with a mixture of hopes for coming successes and of tragic setbacks. Five new missions were launched or reached their destinations this year.

In the first Soviet mission to Mars since 1973, the spacecraft Phobos 2 attained orbit about Mars and had begun an intricate set of experiments to investigate the planet, its environment, and the larger of its two moons, Phobos. A rendezvous with the satellite was underway, for the purpose of deploying two small landers to study the surface, when contact with the spacecraft was lost in March; the cause of the failure is still being sought. This loss will have repercussions upon the American Mars Observer mission, scheduled for 1992, and the Soviet Mars mission planned for 1994.

Magellan was sent on its way to Venus on May 4, with the aid of an Inertial Upper Stage from the Space Shuttle, marking the beginning of the first American interplanetary mission since the launch of Pioneer Venus in 1978. The nominal mission is to conduct a 243-day radar mapping survey at about an order of magnitude higher resolution than is currently available. The delay of the Shuttle launch by six days into the recent "window," along with the precision to which Magellan reached its intended trajectory, has led to a sufficient savings of on-board propellant to extend the length of the study by at least threefold, permitting plans to obtain radar coverage of Venus' south polar region, which has never been previously examined.

On August 8, the European astrometric satellite, Hipparcos (for High Precision PARallax Collecting Satellite), was launched by an Ariane 44LP booster. The mission was intended to fix positions of some 120,000 stars to 0.002 arc-seconds (and about 400,000 stars to lesser precision) during its planned two-and-a-half year duration. This would permit determination of parallaxes and proper motions as well for a great many of these stars, leading to a greatly improved understanding of the dynamics of stellar motions in our Galaxy. However, after a successful injection into its transfer orbit, the spacecraft's solid-fuel apogee boost motor failed to ignite, despite repeated firing attempts by ground controllers. Even in the face of this tribulation, project managers are optimistic that measurements can be carried out for at least a year from

the satellite's present eccentric orbit, albeit at reduced precision.

The much-delayed Galileo mission to Jupiter was launched at long last on October 12 from the Shuttle, employing an Inertial Upper Stage. Because of the limited capability of this vehicle, the spacecraft begins a six-year journey to the giant planet by way of one gravity assist from Venus and two by Earth. Although this represents a significant departure from the original plan for the mission, it is expected that much useful information will be obtained from Galileo's instruments as they sweep past these two smaller planets. This included high-resolution images of the far side of our Moon, which had not been observed since the days of Apollo. Galileo will begin its primary mission, to examine the atmosphere and vicinity of Jupiter and the surfaces of its moons, in 1995.

In November, the Cosmic Background Explorer (COBE) was scheduled to be launched into a polar orbit from Vandenberg Air Force Base aboard a Delta rocket. In the course of its one-year mission, it will map the entire sky twice at wavelengths between one centimeter and one micron. The details of the variations in brightness of the sky in this range will aid in our comprehension of the origin of the Universe and its early development to the era of the formation of the galaxies.

The constellation of NASA's Tracking and Data Relay Satellites (TDRS) was completed in February with the launch of TDRS-4 aboard the Space Shuttle. This system in geosynchronous orbit provides nearly continuous communication with the space agency's near-Earth spacecraft, including the Space Shuttle, allowing the elimination of much of NASA's network of ground tracking stations. The data throughput rate of TDRS is greater than that of the ground network; its almost continuous visibility reduces the need to rely upon onboard tape recorders. Three additional TDRS spacecraft are in production to enable NASA to meet the data handling needs of its scientific missions well into the 21st Century.

In contrast to these large, complex, and expensive spacecraft, planning began in April for the Small Explorer series. Each satellite is to weigh about 400 pounds for launch on Scout rockets and should cost around \$50 million. It is intended that each mission require less than three years from the start of its detailed design phase to the launch of the satellite. The first of the present sequence of four, the Solar, Anomalous, and Magnetospheric Particle Explorer (SAMPE), is to be placed in orbit in mid-1992.

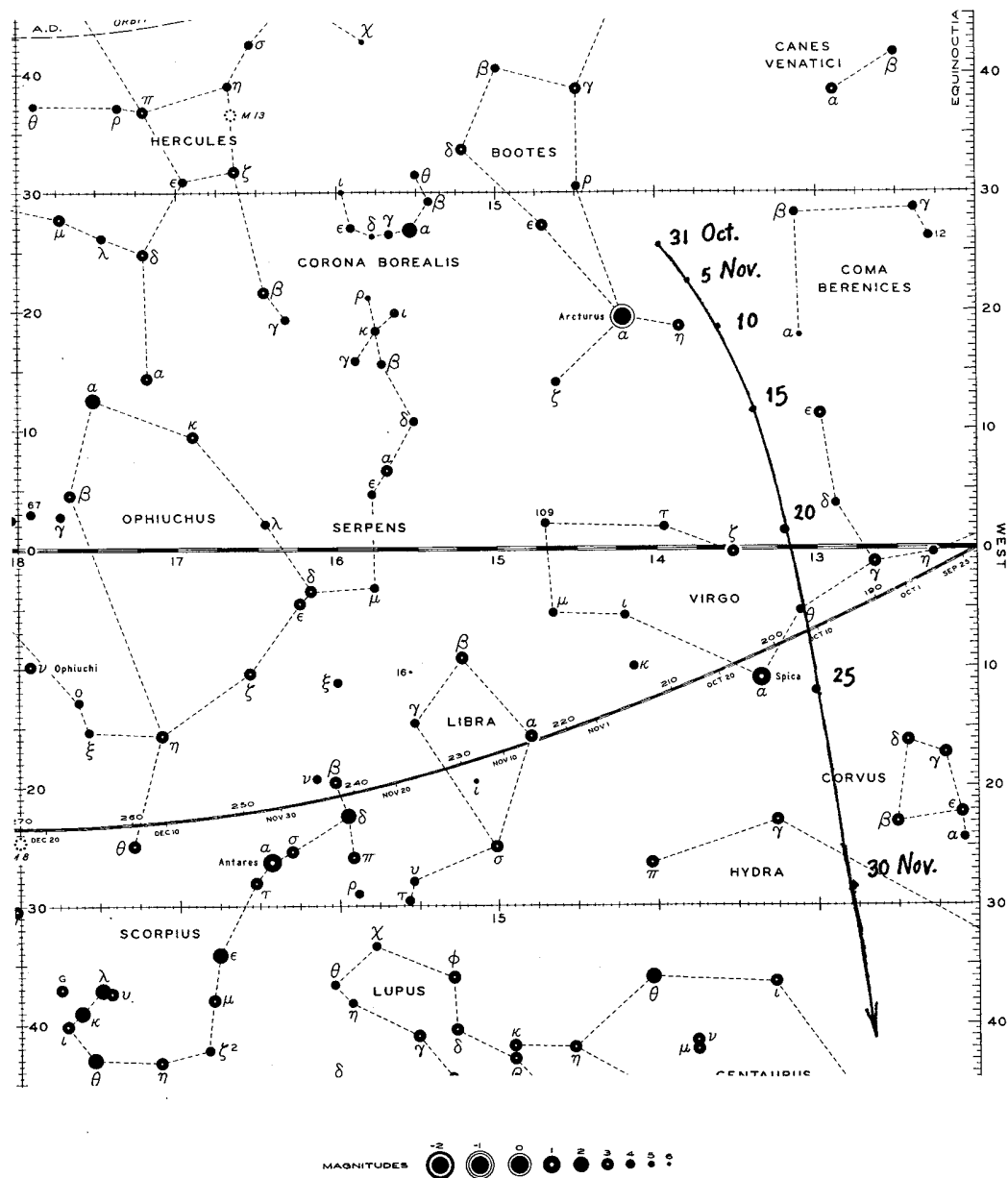
NASA has chosen to end the dependence of the last of the four Great Observatories, the Space Infrared Telescope Facility (SIRTF), upon servicing by the Space Shuttle. Instead, the instrument will be placed into a 100,000 km. orbit, improving its view of space compared to that available from low Earth orbit, and eliminating its requirement for the scarce resource of Shuttle launches. This decision is already influencing the plans and designs of many future scientific missions.

The current cycle of solar activity continues to give every indication of being at least as intense as the one which peaked in 1958, the strongest cycle on record. On March 6, one of the largest solar flares in the past decade erupted, creating the second largest geomagnetic storm in fifty years, which disrupted radio communications and power transmission in places and produced aurorae as far south as Mexico. The concomitant heating of the upper atmosphere by the solar activity leads to an increase in atmospheric drag on all low-orbiting satellites. This aggravated the orbital decay of the Solar Maximum Mission satellite, which was launched in February of 1980 to study the previous solar cycle and which re-entered our atmosphere this November.

Of greater concern is the imminent loss of the Long-Duration Exposure Facility (LDEF), which carries nearly sixty material and biological experiments. This module, left in orbit by the Shuttle in April of 1984, was to be retrieved a year later. Due to the mounting atmospheric drag on LDEF, it is expected

to burn up in the atmosphere by January at the earliest, representing a grave loss of information about the effects of long-term exposure to the space environment, much of which is critical to the design of the Space Station and future spacecraft. It was hoped that the STS-32 mission could be re-scheduled for November to rescue LDEF. Failure in this will raise serious questions as to the ability of the Shuttle to service other missions, such as the Hubble Space Telescope, other Great Observatories, and the Space Station.

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If you're up around dawn, take a look for Comet Okazaki-Levy-Rudenko, known more prosaically as 1989r. It's not often even a fourth-magnitude comet shows up (Comet Halley was only that bright this time around) and this one probably isn't coming back. It will be visible in the east to northeast maybe an hour or so before sunrise and will be at its brightest around the 20th of November.

It'll be out of sight in America and Europe by the first week of December.